	Application No.	Applicant(s)
Notice of Allowability	10/694,909	SASAKI, GEN
	Examiner	Art Unit
	Nhan T. Tran	2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to <u>preliminary amendment filed 10/29/2003</u>.

2. ☒ The allowed claim(s) is/are <u>17</u>.

3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☒ All   b) ☐ Some*   c) ☐ None   of the:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☒ Certified copies of the priority documents have been received in Application No. <u>09/459,574</u> .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
    Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit
    of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)

6. ☐ Interview Summary (PTO-413),
    Paper No./Mail Date _____ .

7. ☐ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____.

DETAILED ACTION

Priority

1.   Acknowledgment is made of applicant's claim for foreign priority under 35

U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No.

09/459,574, filed on 12/13/1999.

Specification

2.   Amendment to specification filed 10/29/2003 to include the statement, "This

application is a divisional of co-pending U.S. Patent Application No. 09/459,574, filed

December 13, 1999, the entire contents of which are hereby incorporated herein by

reference." is acknowledged and accepted.

Information Disclosure Statement

3.   The information disclosure statements (IDS) submitted on 10/29/2003 &

1/29/2004 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the

information disclosure statements are being considered by the examiner.

Allowable Subject Matter

4.   Claim **17** is allowed.

The following is an examiner's statement of reasons for allowance:

The closest references found are:

   Kwak et al. (US 6,166,781) discloses a non-linear response correction
apparatus and method reduce look up table size and output error. In one embodiment,
a range of an N-bit input signal is split into two or more sectors, based on a gradient of a
non-linear correction curve and an allowable error, and then a N-bit input signal is
divided into U upper bits and D lower bits where U and D depend on which sector
contains the input signal. First and second look up tables read first and second data
stored therein, respectively, using the upper bits of the digital signal as an address. The
first data is the difference between a corrected signal and the input signal, and the
second data is the gradient of the corrected signal with respect to the gradient of the
input signal. The second data read from the second look up table is multiplied by the
lower bits, and the first data read from the first look up table is added to the upper bits.
The sum is added to the product to produce an N-bit digital corrected signal that
compensates for the non-linear characteristics.

   Okada (US 5,706,058) discloses a gamma correction circuit including a first look-
up table in which minimum values of differences between output levels of a gamma
correction curve and output levels of a straight line in respective sections formed by
dividing a range from a minimum input level to a maximum input level into sixteen are
stored. Furthermore, data of differences between the output levels of the gamma
correction curve and levels obtained by adding the minimum values to the output levels
of the straight line in the respective sections are stored in respective second look-up
tables of sixteen. Then, one of the minimum values is read-out from the first look-up
table according to upper four bits of input video data, and one of the second look-up

tables is selectively enabled by the upper four bits, and data stored in the selected second look-up table is read-out in accordance with lower six bits of the input video data. Outputs from the first and second look-up tables are added to each other so as to output gamma correction data which is then added to the input video data, whereby a gamma characteristic of the input video data is corrected.

Jang (US 5,361,094) discloses that, in the conventional method of circuit configuration, the luminance and chrominance signals are separated and then the gamma compensation processing is individually performed with respect to each signal, so that four gamma compensation circuits (12d, 14b, 14c and 14d) become necessary. Accordingly, each gamma compensating circuit having non-linear characteristics should be embodied as a ROM look-up table.

Nobouka et al. (US 5,473,372) discloses a gamma correction circuit for converting N-bit input data into M-bit output data by using a gamma correction curve approximated by a polygonal line having a plurality of straight line sections each having a different slope, the gamma correction circuit including a calculation circuit for executing conversion calculation for each the straight line section; and a control circuit for controlling the calculation circuit in accordance with a value of the input data so that the calculation circuit executes the conversion calculation for each the straight line section corresponding to the value.

Takahashi et al. (US 6,181,386 B1) discloses an electronic endoscope having a solid state image pickup device supplies an image signal which is converted into a digital signal and subject to a gamma correction in a gamma correcting portion in accordance with gamma correcting data stored in and read from a look-up table. The look-up table stores only data necessary for the gamma correction with respect to the image signal, so that data for the gamma correction is added to the image signal in the gamma correcting portion to output a gamma-corrected signal.

However, the prior art of record fails to teach or fairly suggest the combination of all limitations of claim 17 that includes, "…said real time processing unit further comprises: a gamma compensation table capable of performing, when given a **N-bit length pixel data**, gamma compensation processing about said pixel data; and **a selector in which, when given a N-bit length pixel data, said pixel data is inputted to said gamma compensation table; and when given a (N-2)-bit length pixel data, switching is made so that four data rows sequentially provided as a (N-2)-bit length pixel data, are respectively inputted to four look-up tables obtained by dividing said gamma compensation table into four.**"

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

5.   Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Nhan T. Tran whose telephone number is (571) 272-
7371. The examiner can normally be reached on Monday - Thursday, 7:30am -
5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for
the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the
Patent Application Information Retrieval (PAIR) system. Status information for
published applications may be obtained from either Private PAIR or Public PAIR.
Status information for unpublished applications is available through Private PAIR only.
For more information about the PAIR system, see http://pair-direct.uspto.gov. Should
you have questions on access to the Private PAIR system, contact the Electronic
Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a
USPTO Customer Service Representative or access to the automated information
system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NT.

DAVID OMETZ
SUPERVISORY PATENT EXAMINER